We are IntechOpen,
the world's leading publisher of
Open Access books
Built by scientists, for scientists

4,800
Open access books available

122,000
International authors and editors

135M
Downloads

Our authors are among the

154
Countries delivered to

TOP 1%
most cited scientists

12.2%
Contributors from top 500 universities

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com

Handling Innovative People

M. Dolores Storch de Gracia, Luis Mazadiego and
Bernardo Llamas

Additional information is available at the end of the chapter

If you want to go fast, go alone. If you want to go far, go together

African Proverb

Abstract

In innovative environments or departments, where employees must be motivated to produce new ideas, products or processes, is critical to consider not only technical skills but soft skills such as communication, leadership, responsibility and teamworking. The result of an innovation team goes beyond the optimum performance that is asked of a standard team, since they usually set ambitious goals that allow to go beyond the current state of the art and this makes the operation of these teams especially delicate. As a result, general considerations about work teams are considered, focusing on the model of Tuckman's team development sequence and Belbin Theory. Last but no least, a section is dedicated to "what to pay attention to in groups" as a key issue. As a conclusion, the working group can be an effective management tool for companies to solve difficult and complex problems. In the case of innovative profiles, special attention must be paid to the motivations of these people, who are often different from others. The authors have identified all these aspects as key issues to research and they will dedicate the following academic courses to study in detail some specific roles and their implication in successful innovative projects.

Keywords: innovation skills, work teams, innovative people

1. Introduction

In innovative environments or departments, where employees must be motivated to produce new ideas, products or processes, it is critical to consider not only technical skills but also soft skills that create the difference between adequate candidates and ideal candidates. Moreover, these soft competences have increased their interest as the current markets are global and fast-changing: the difference between similar products depends on the creativity and innovation [1].

One of the most considered soft skills is teamwork, and it involves a combination of other soft skills (communication, leadership, responsibility, among others). In an increasingly complex and information-rich world, the value of collaboration is growing in importance. Work is increasingly being organized in teams rather than individuals [2]. Teamwork enables:

- Recognition of each person's unique contribution to the team.

- More effective "data collection" in rapidly changing situations.

- Commitment and satisfaction that responds to the social needs of individuals and groups.

- Improved interpersonal communications that allow more energy to be directed toward the task.

- Efficient assignment of work based on the strengths and experience of each member.

- Quality in decision-making through the wisdom of team members.

But this implies:

- It is important to have the right people at the right time.

- It is crucial to assign specific roles to each team member.

- A communication system is needed among project members.

In the case of innovation working groups, the reason for creating a team responds to the need to respond to a specific need (project, work group, etc.) and in many cases are temporary teams formed by people belonging to other departments and should contribute in a timely manner to the team [3].

Whether members of innovation teams belong exclusively to an Innovation Department or whether they come from other departments, the main characteristic that defines them is the degree of excellence that is expected of their performance.

The result of an innovation team goes beyond the optimum performance that is asked of a standard team since they usually set ambitious goals that allow to go beyond the current state of the art (in many cases patent objectives or new discoveries are established) and this makes the operation of these teams especially delicate.

2. Work teams: general considerations

Building and managing teams is difficult, and even the best managers are sometimes wrong. For people, to find a reason to work as a member of a team, it needs a common goal and a sense of identity [4].

There is technique in team building, and it can be done well or bad. When done well, an effective team can exceed all reasonable expectations given to its individual members, that is, a team has a synergistic effect $(1 + 1 > 2)$.

This is especially true when the perspectives, skills, and experiences of the members are diverse but complementary. Diversity allows you to respond to each challenge in your

own way and as a team you increase productivity, foster commitment, and stimulate innovation.

However, if done wrong, teams can become catalysts for communication failures, unclear role limits, misallocation of jobs, roles, etc., all this hinders the success of all involved (individual/ team/organization).

To be considered:

Team work: Tuckman theory and Belbin theory (roles of people in a team).

What to pay attention to in groups?: Factors that could affect your ability to perform.

2.1. The model of Tuckman's team development sequence

It identifies the phases of the development through which the team passes and rectifies its equipment management style [5, 6]. This theory puts the emphasis on the actions that have to be undertaken to transform a group of individuals into a great team [7]. In the following **Figure 1** you can see the diferent phases in a team.
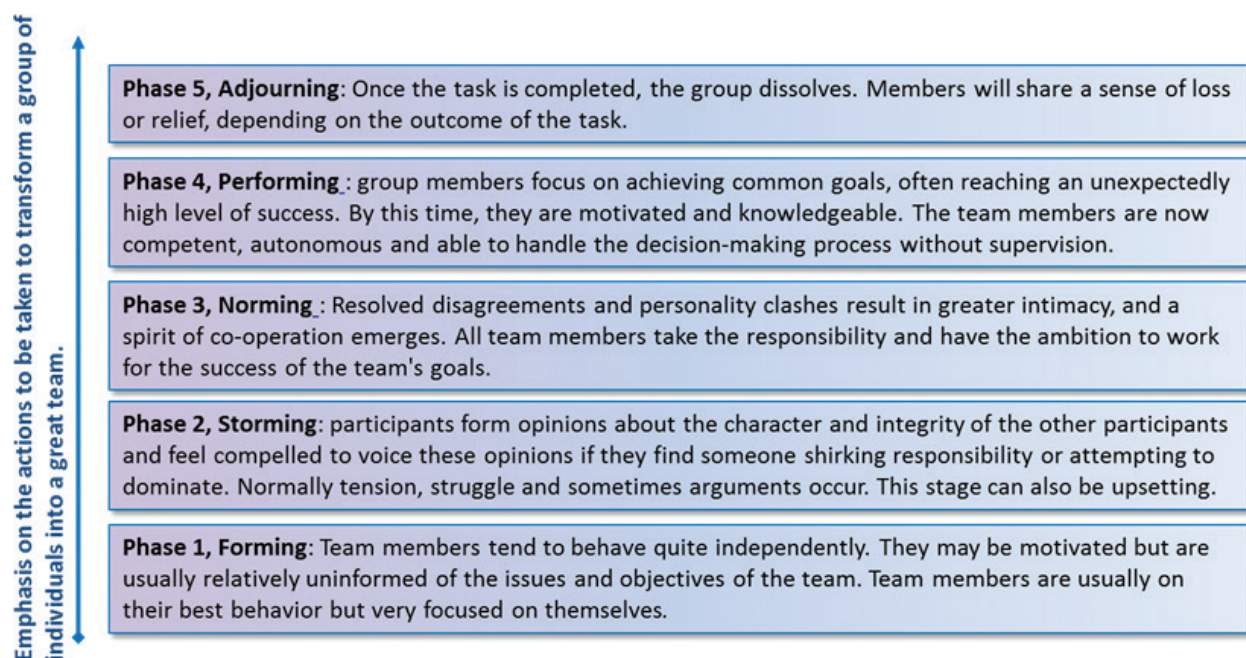

Figure 1. Different phases in a team (Tuckman theory).

The most important aspects to consider in each phase are:

(1) Orientation at the time of forming the team:

- Explain the raison d'être of the team, its goals, and its objectives.

- Negotiate and establish the rules of the game.

- Listen to concerns raised by team members and address them accordingly.

(2)   In the storming phase:

- The manager and/or coordinator should be prepared to handle any challenges to their authority and internal conflicts.

- The way to deal with it will establish the tone of the behavior that you can expect members to display throughout the team's operational life.

- It is possible that acting passively or aggressively is not the best when thinking about the interests of the team.

- Whenever possible look for a win-win solution; point in common (Covey's Seven Habits of Highly Effective People®).

(3)   In the norming stage:

- The manager's role becomes supportive.

- Team members solve their own problems.

(4)   In the performing phase:

- Adopt an observer position.

- The group takes the initiative.

(5)   In the phase of adjourning:

- Celebrate the success of the team and to recognize the contribution of all its members.

2.2. Work teams: Belbin theory

Teams are widely recognized as the basic building blocks of current industries and companies [8]. However, team composition should be balanced and with different roles, considering knowledge, skills, abilities, and other characteristic which provide an optimal combination of members. A role is generally defined as a cluster of related and goal-directed behaviors taken on by a person within a specific situation [9]. There are two different branches in the team role literature: (i) role as position and (ii) role as person [10].

Dr Meredith Belbin of the University of Industrial Training Research, obtained a convincing and widely documented answer that helped crucially to understand the functioning of groups and how to make them work better [11].

Belbin's fundamental discovery is that all members of a management team have a double role [12]. The first role, the functional role, is obvious (production engineer, accountant, marketing executive, etc.). Nevertheless, the second role he calls the "team role" is much less evident and yet we are all a little aware of. For example, we all know that Mary has great ideas, John wants to make decisions and assign tasks and Paul throws away the proposals of others but we also know that Mary, John, and Paul exhibit these characteristics in any team.

2.2.1. Why Belbin?

Previously, we explained that when setting up a computer you may use techniques and therefore get it done right or wrong. If we are going to build teams, we must configure them well

and this is where Belbin's theory can help us. Moreover, a balanced team will increase and accelerate innovation process [13].

Belbin proposes that the result of teamwork is effective when its members work as "team players"—where each player understands how important it is for everyone to cooperate and work toward a common goal. When everyone does their job well, this increases the goals the team can achieve. It is of key importance that each person knows what brings to the team (from a functional and behavioral point of view).

Belbin suggests that each person has a double role: functional and team roles (**Figure 2**).
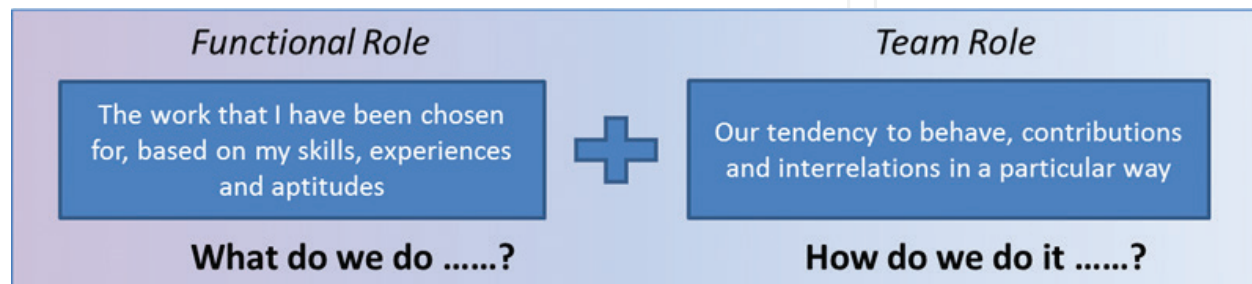
Figure 2. Roles suggested by Belbin theory.

The conclusion is that, without ignoring or neglecting the individual, we should pay much more attention to the teams: to their selection, development, and training but above all to their psychology, motivation, composition, and behavior … but how?

The first problem we face is that psychology has traditionally been oriented toward individuals and knowledge of successful teams is very scarce.

3. Belbin: no one is perfect (but a team can be!)

The producer of ideas, the child genius, the constant worker, the slave loyal to the company on other, are people we know or have worked with. Individually, they can drive us crazy, but if we give them a role in a team, they can eat the opposition.

Many companies look for the right person to develop good management and care about the qualities, experiences, and achievements of people. However, we all know that the ideal person does not exist.

In enumerating the qualities of the good manager, we see that many qualities are exclusive: he must be energetic but sensitive to people, dynamic but patient, communicate well but listen carefully, make decisions but reflect. Not everything at once is possible and even if it were, even if we found this wonderful person he or she could go one day.

However, a team can meet these qualities and do not usually go all at once and for this reason, the success of management is mainly due to the team. A team can hoard the necessary qualities, can be renewed by recruiting new people and accumulate lots of shared experience and can be in 10 places at a time. We have all seen a successful person in a team not perform at that same standard when

changing teams we have seen effective teams that are destroyed by the rise of individuals without considering the rest of the team. We have also seen teams that produced quality and amount of work much larger than the sum of the work that individuals could have produced individually.

The main conclusion of Belbin was that there is no person who meets all the qualities of the good manager and therefore the key to success in management resides in teams. When?

Choosing team members, it is not only essential to have people with the skills identified by Belbin theory, but also people who are able to complement their strengths and compensate for their weaknesses [14].

This theory identified team roles by observing teams for 7 years and achieved most perfect prediction level.

Belbin sought to identify four factors in his tests:

- Intelligence
- Domain
- Introversion/extroversion
- Stability/anxiety

The Belbin model is based on the following three premises:

a. If you form a team with individuals with the knowledge of where each profile fits you can let the energy of the team focus on the task when it was formed instead of consuming time in knowing what each one of them expects from the other.

b. We all have behavior patterns in groups or team situations (known as team roles).

c. The team can be greater than the sum of the parts by the synergy that is produced by the diversity of roles.

In a balanced team, a set of roles fulfilled is as follows:

(i) Useful people in a team are those who possess strengths or characteristics that serve to satisfy a need without duplicating those that already exist.

(ii) Teams are a matter of balance.

(iii) You need people who balance each other in their team roles.

(iv) One or two team roles can be observed in a person (if two are observed, one of them will be dominant and the other secondary).

Various investigations have led to the identification of nine team roles that team members often adopt:

1. Director/coordinator

2. Impeller/motor

3. Brain/creative/plant

4. Monitor/evaluator

5. Implementer

6. Resource investigator

7. Co-worker/team worker

8. Finisher

9. Specialist

The following figure (**Figure 3**) shows the diferent roles and their main focus associated.
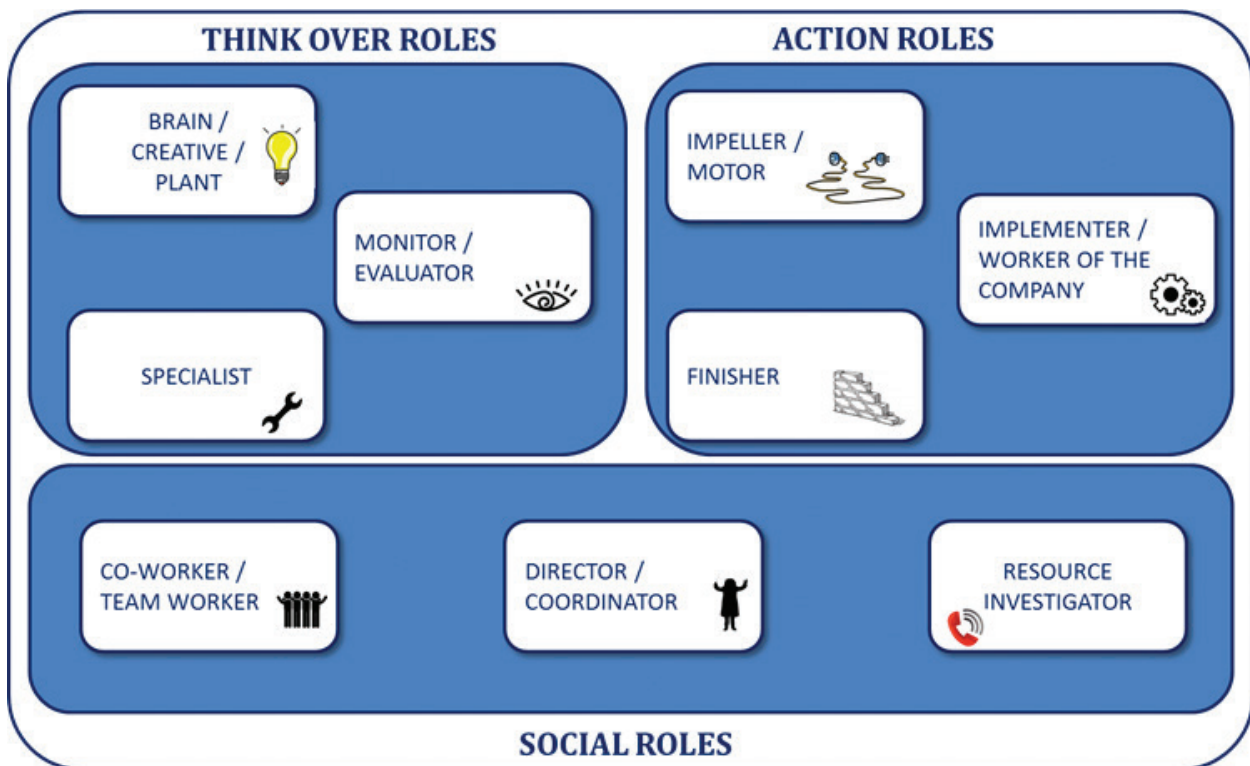

Figure 3. Belbin roles.

1. Director/coordinator: Is responsible for coordinating efforts to reach the objectives. Sets the agenda, is calm, confident, and responsible for maintaining the balance of the team. He is the social leader (stable, dominant, and extrovert).

2. Impeller/motor: Is the task entrepreneur and influences the decisions of the team; he is willing to be unpopular if the job demands it. He is the task leader (anxious, dominant, and extrovert).

3. Brain/creative/plant: Generates ideas and develops innovative ways to solve problems; highly creative and good problem-solver in an unconventional way (very intelligent, dominant, and introvert).

4. Monitor/evaluator: Is the analyst dispassionate, analytical, and objective; can annoy his team-mates with his criticism but is almost never wrong (very intelligent, stable, and introvert).

5. Implementer/worker of the company: Is the practical organizer. He works hard to turn ideas into facts, can annoy his teammates because he is reluctant to compromise; needs stability (stable, controlled).

6. Resource investigator: Often astute and enthusiastic, is the most relaxed; finds the necessary resources and immediately blocks any opposition (stable, dominant, and outgoing).

7. Co-worker/team worker: Is the most active internal communicator; is the support of the social group; unites the team and helps to resolve any interpersonal and professional conflicts that occur within the team (stable, outgoing, not very dominant).

8. Finisher/retailer: Worries about what can fail. The main concern is the order, the dates, and commitments. Determined and committed, although he may be considered interested in completing the work at all costs (anxious, introvert).

9. Specialist: Provides technical expertise in key areas; can annoy others by focusing solely and exclusively on their area of expertise.

According to these roles, Belbin theory defines different weakness and strength of each role [15]. It is convenient to identify the role of each member of the team, and lead them considering their contribution, working together to avoid non-allowed weakness (**Table 1**).

CONTRIBUTION / STRENGTH	WEAKNESSES PERMITTED	WEAKNESSES NOT ALLOWED
Director / Coordinator Takes advantage of group skills	Manipulator Lazy if he finds someone to do his homework	Assumes all credit for team effort
Impeller / Motor Energetic and challenging	Aggressive / Provocative Prone to frustration	Inability to readdress negative situations
Brain / Creative / Plant Creative, solves difficult problems	Ignores the reality of everyday life	Little cooperation with others. High sense of ownership of an idea
Monitor / Evaluator Insightful and objective	Skeptical	Cynicism without logic
Implementer Organized, efficient, practical	Slow in perceiving new possibilities Inflexible at times	Obstructing change
Resource investigator Entrepreneur, seeks new opportunities	Not good for finishing tasks Too optimistic	To defraud the trust of the team for neglecting the follow-up of the agreements
Co-worker / team worker Cooperator, avoid clashes	Undecided Influential	Avoid situations of pressure
Finisher Careful, thorough	Reluctant to delegate Perfectionism	Obsessive Behavior
Specialist Delivered to his profession	Limited Interests	Ignores factors outside your own area of competence

Table 1. Belbin's role and its strength and weakness.

Belbin's main conclusions are as follows:

1. The absence of a role weakens the team but also if there are too many with the same role.

2. A team role shows our "tendency to behave, contribute, and interrelate in a particular way".

3. If there are fewer than nine people, each member takes several roles (main and secondary) while in large teams, subgroups are usually formed where these roles appear in each of them.

4. The knowledge of the roles in established teams helps less than in the new teams where the combination of roles has been very effective.

5. The construction of equipment through the balance of papers is more important in areas of work under pressure or fast action as well as in environments where creativity is needed (R&D, innovative projects, and others).

6. Teams made up of a majority of very smart people usually fail.

7. In recruiting people in the workforce, in addition to Belbin's skills, people should be selected to complement strengths and compensate for weaknesses.

8. Set SMART goals: Specific, measurable, attainable, realistic, and timely. Recent studies include two more characteristic to be smarter goals which add two new characteristic: evaluable and relevant (smarter).

9. Evaluate the environment (internal and external).

10. It is necessary to adapt the style of leadership (situational leadership theory).

11. While all teams are made up of groups of individuals, not all groups of individuals form a team.

3.1. Ecorun project as a case of study

Nowadays, there is increasing interest in the development of teamwork skills in the educational context as one of the soft skills: competences in higher education include, among others, this skill.

Master degree of the mining engineering at Universidad Politécnica de Madrid is one of the university program which is recognized by ABET institution—one of the most renowned audit institution worldwide [16].

According to the master degree program, the students should achieve teamwork and communication skills. For this reason, project evaluation and risk management subject includes an innovative methodology to evaluate such competences [17]. Students should collaborate in small groups, developing innovative projects. At the end of the course, they should explain their project to a panel of experts on different fields (civil works, energy, mining, water, and others) and, as a result, the experts should evaluate their project and different skills: creativity and communication.

One of the most promising projects—Ecorun project[1]—failed in its objective to achieve the investment needed to develop the project. But why?

---

[1]EcoRun Systems Project. Students proposed a system of energy recovery through the footsteps, as a strategy toward smart cities. The technical principle was based on tracks of any size formed by piezoelectric materials to transform mechanical energy into electricity energy. Electricity would be used in public lighting near the track and/or sports area within the city, in order to achieve both, an environmental benefit and a reduction in the cost of electricity consumption. Execution Term: 21 months, budget: 338.000 €.
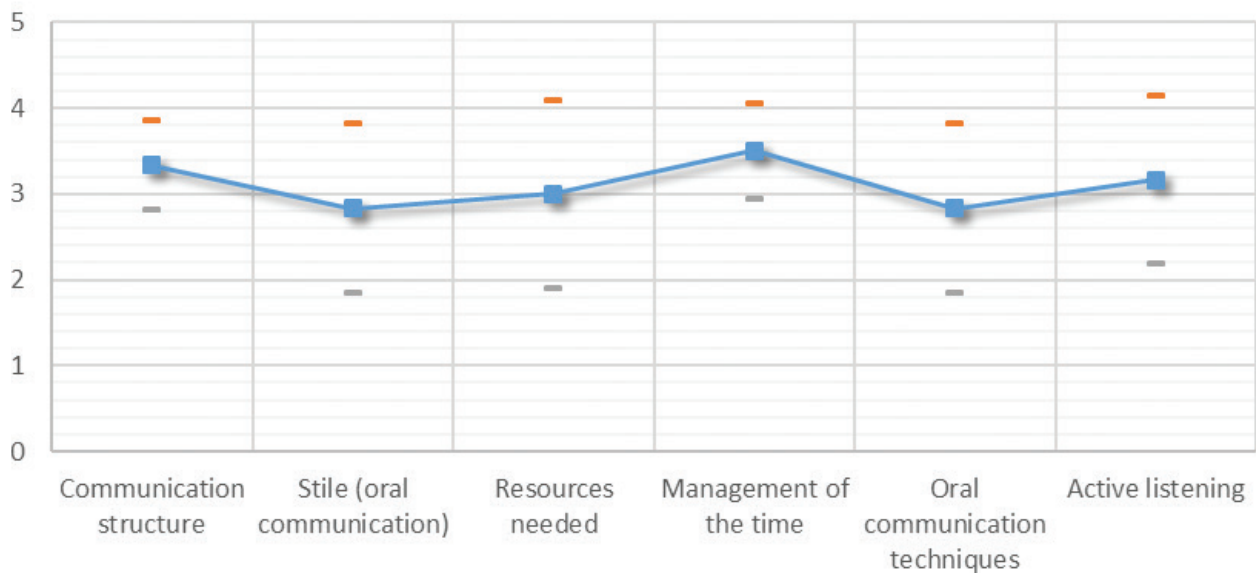
Considering the Junk analysis (**Figure 4b**) the team showed a balanced team to work and collaborate for a goal—present a nice project proposal. However, every project needs to be financed and that is the point where resource investigator role defined in Belbin's Roles (**Figure 4a**) is critical for the success in the project phase approval.

In this case, none of the six students had this role, and they did not communicate properly the advantages of this project (**Figure 5**); a balanced team (**Figure 4a**) demonstrates which roles are necessary in innovative projects (plant/creative and resource investigator)—where external and internal support is critical. Unluckily the project was not financed in this simulation where the rest of the project (balanced teams) got the required investment.
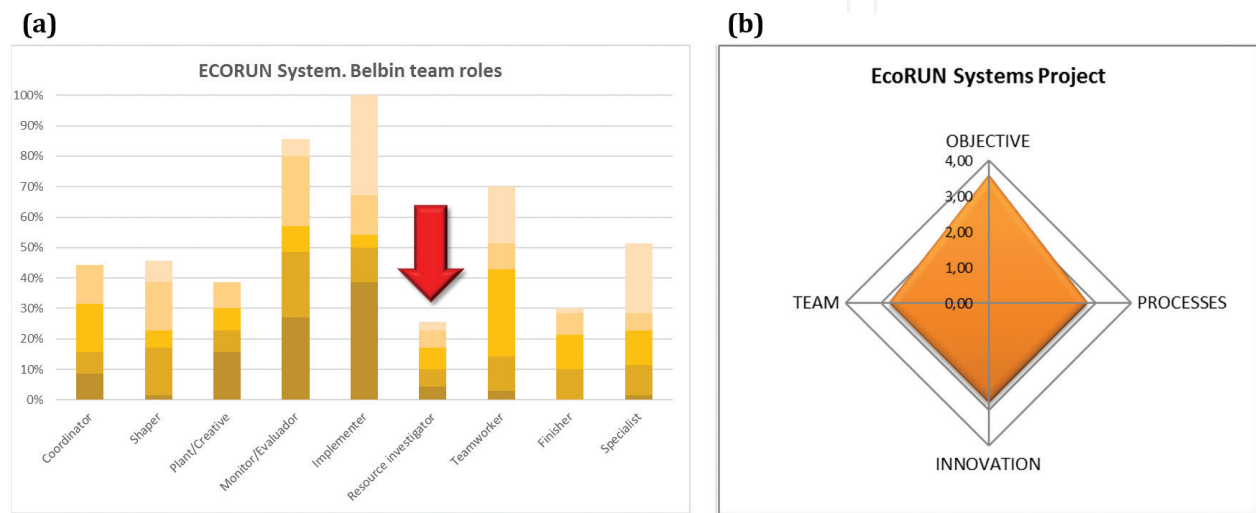
Figure 4. Ecorun systems as a case of study: Belbin roles (a) and junk behaviors (b).

Figure 5. Oral communication skills (five-point Likert scale). Values based on the evaluation of six professionals—public and private sectors.

4. Work teams: what to pay attention to in groups

In all human interactions, two ingredients are necessary to consider: (i) the content: subject or work on which you work and (ii) the process: refers to what happens between and among members of the group while working. In the process, we deal with topics such as morals, feelings, atmosphere, influence, participation, styles of influence, competitiveness and cooperation, among others.

In many interactions, little attention is given to the process even though it is the major cause of inefficiency of group action. Knowledge of these processes will allow participants to be more effective.

The following subsections are the issues that help the group behavior analysis.

4.1. Participation

An indication of commitment is verbal participation. Observing the differences in membership will give us a lot of information.

For considering this aspect, we should pay attention to who is participating more or less, if there are any changes in participation (the more participants are silenced, the less talkative) and if we see any reason for this in group interactions.

Other aspects to be considered are how the silence of people is treated, how it is interpreted (consent, disagreement, disinterest, fear), who speaks to whom or who takes the leading role.

4.2. Influence: styles of influence

Influence and participation are not the same. Some people may talk little but get the attention of the whole group while another speaks a lot but they are not heard by the members.

In order to get information about influence in the team, we should detect which members have the highest influence (when they speak they are heard), which members are of low influence (do not listen or follow), if you see rivalry in the group, there is conflict to lead and what effect does it have on other members of the group.

The influence can be positive or negative. The following tips suggest four behaviors that frequently emerge in groups:

1. Autocritic: If anyone tries to impose their will or values on other members or tries to push them to support their decisions, evaluates or judges other members of the group, a member blocks the action when it does not move in the direction you want or is trying to keep the group organized.

2. Pacifier: You can suspect this behavior when someone supports the decisions of the group, anyone is trying to avoid conflict or there is a member who tries to avoid negative feedbacks.

3. Laisser-faire or leave to do: If any member draws your attention for his/her apparent lack of commitment to the group, any member follows the group's decisions without seeming to affect them, someone appears as reserved and little involved or there is a member who do not start activities and only answers questions from other members.

4. Democratic: When someone tries to include everyone in a group decision or discussion, expresses their feelings and opinions openly and directly without evaluating or judging others, is open to feedback and criticism from others or there are members which try to improve conflict by finding compromising situations.

4.3. Decision-making process

Many decisions are made in groups without taking into account the effects of them on other members. Some try to impose their own decisions on the group while others try to involve or share the decisions that are made with the rest.

The following aspects of this process should be considered:

1. If anyone makes decisions and carry them forward without reviewing them with the rest of the group and what effect it has on other members.

2. If the group fluctuate from topic to topic (Who skips the subject?) and if you see any reason for it.

3. Who supports the suggestions of others.

4. If there is a majority trying to push decisions about objections from member bulls or if there is a vote.

5. If there are attempts to reach consensus among all members and what effect it produces.

6. If there is anyone who suggests without finding an answer and what effect it has.

4.4. Functions of task

These functions illustrate the behavior of the person who structures the work that the group has before.

Try to investigate if there is any member who suggests the most appropriate way to proceed when facing a problem, if anyone tries to summarize what has already happened or what has happened in the group, if there are any questions about facts, ideas, opinions, feelings, or research alternatives.

Who leads the group toward the goal or who prevents from jumping from one topic to another or going off on tangent?

4.5. Maintenance functions

These functions are important to the morale of the group. They maintain good and harmonious working relationships between members and create an atmosphere in the group that

allows each member to participate to the fullest. Ensure peace of mind and effective work in the group.

Observe who helps the other participants in the discussions, who cuts others off or interrupts them, how members get their ideas out, if there are some members concerned and not listening, if there are attempts by some members to help others sort their ideas or how ideas are rejected and how people react when their ideas are not accepted.

4.6. Group staff

The way the group works generates an atmosphere. People, moreover, often differ on the type of atmosphere they like in the group. You can find people that prefer a friendly atmosphere if there are attempts to suppress unpleasant conflicts or feelings.

On the other hand, people that prefer an atmosphere of conflict and disagreement can be detected if you find some members teasing others.

As a general rule, try to observe if people seem interested and how is the atmosphere.

4.7. Members

One of the important points is the degree of acceptance or inclusion in the group. It is crucial to observe if there are any subgroups or some members consistently support or oppose others, if some seem to be out of the group or look like this "in or how outsiders are treated."

Finally, if some move outside and within the group and under what conditions they move.

4.8. Feelings

During group discussion, feelings are generated by interactions between members. Of these feelings that are rarely spoken observers should make assumptions based on tone of voice, facial expression, gestures, and other forms of non-verbal language [18].

The feelings that are observed in the members of the group are anger, irritation, affection, excitement, boredom, defensive attitude, competitiveness, and others. We should take into consideration if there are attempts to block expressions of feeling, particularly negatives, how it is done or if anyone consistently does it.

4.9. Norms

Standard or basic rules can be developed in a group to control the behavior of its members. Standards generally express the beliefs and desires of most members about what behaviors should or should not take place in the group.

These rules may be clear to all members (explicit) or well known or felt by a few (implicit). Some rules facilitate progress in the group and some make it difficult.

Observe if there are certain avoided areas in the group (religion, feelings,), there are members of the group extremely polite or gentle among them, only positive feelings expressed or you

can see rules about participation or about the kinds of issues that are allowed or members feel free to demonstrate their feelings.

5. Conclusion

The working group can be an effective management tool for companies to solve the difficult and complex problems. In the case of innovative profiles, special attention must be paid to the motivations of these people, who are often different from others.

In the innovative profile, in our opinion, it is very important to satisfy the need to perform and supervise the correct role assigned to bring results that come from basic competences such as creativity, innovation or communication. On the other hand, in general, factors that contribute to the effectiveness of the groups' performance would be observed to be met:

- The group concentrates well on the task, either because it has been formed to solve a specific problem or to achieve a defined result (when the problem is solved or the task is finished, the group dissolves).

- If the group brings together people from different functional areas affected by the problem to be solved or task to be undertaken, it will possess a diversity of knowledge and skills that in principle must produce high quality solutions.

The results of our approach allow us to identify as points to work in the future, the functionalities, and resolution of engineering problems taking into consideration economic and beneficial aspects for several stakeholders or society in general. Another aspect to work on the creativity concept will be the impact, looking for engineering solutions that allow a greater replicability.

The authors have identified all these aspects as key issues to research and they will dedicate the following academic courses to study in detail some specific roles and their implication in successful innovative projects.

Author details

M. Dolores Storch de Gracia*, Luis Mazadiego and Bernardo Llamas

*Address all correspondence to: lola.storch@.alumnos.upm.es

ETS, Ingenieros de Minas y Energía, Universidad Politécnica de Madrid, Ríos Rosas, Madrid, Spain

References

[1] Muzio E, Fisher D, Thomas ER, Peters V. Soft skills quantification (SSQ) for project manager competencies. Project Management Journal. 2007;38(2):30-38

[2] http://www.highperformanceteams.org/ [Accessed: December 21, 2016]

[3] https://www.mindtools.com/pages/main/newMN_TMM.htm [Accessed: December 21, 2016]

[4] Turner JR, Muller R. The project manager's leadership style as a success factor on projects: A literature review. Project Management Journal. 2005;36(2):49-61

[5] Tuckman B. Developmental sequence in small groups. Psychological Bulletin. 1965;63:384

[6] Tuckman B, Jensen MA. Stages in small group development revisited. Group and Organisation Studies. 1977;2:419-427

[7] http://www.businessballs.com/tuckman forming storming norming performing.htm [Accessed: December 20, 2016]

[8] Mathieu JE, Maynard MT, Rapp T, Gilson L. Team effectiveness 1997-2007: A review of recent advancements and a glimpse into the future. Journal of Management. 2008; 34:410-476

[9] Mathieu JE, Tannenbaum SI, Kukenberger MR, Donsbach JS, Alliger GM. Team role experience and orientation: A measure and test of construct validity. Group & Organization Management. 2015;40(I):6-34

[10] Aritzeta A, Ayestaran S. Applicability of Belbin's team roles theory: A longitudinal and comparative study with work teams. General and Applied Psychology. 2003;56:61-75

[11] http://www.belbin.com/ [Accessed: December 20, 2016]

[12] Belbin RM. Management Teams: Why They Succeed or Fail. 3rd ed. Oxford, United Kingdom: Elsevier; 2010

[13] Mostert NM. Belbin - the way forward for innovation teams. Journal of Creativity and Business Innovation. 2015;**1**:35-48

[14] McGrath J, Bates B. The Little Book of Big Management Theories: …And How to Use Them. Pearson; New Jersey, United States. 2013

[15] Bernardo Llamas M. Dolores Storch de Gracia. Evaluación de proyectos y gestión del riesgo. De una idea a un proyecto. Fundación Gómez-Pardo. 2017. ISBN: 978-84-617-7988-8

[16] http://www.abet.org/wp-content/uploads/2015/05/E001-15-16-EAC-Criteria-03-10-15. pdf [Accessed: March 13, 2017]

[17] Llamas B, Dolores Storch de Gracia M, Mazadiego LF, Pous J, Alonso J. Assessing creativity as a critical competence in engineering. Case of study in mines engineering degree. Thinking Skills and Creativity. 2017. Forthcoming

[18] Llamas B, Pous J, Dolores Storch de Gracia M. Principios de la Ingeniería de Proyectos. Fundación Gomez-Pardo. ISBN: 978-84-608-8312-8